

CITED SOURCE: Sb. Metod fotoelektr. infrakrasn. polyariskopii i defektoskopii poluprovodnik. materialov. M., 1962, 29-35

TOPIC TAGS: birefringence, germanium crystal, crystal growing 21

TRANSLATION: By means of a PIK-1 photoelectric polariscope ($\lambda = 2.25 \text{ mm}$), the effect of thermal conditions during Ge crystal growing upon the birefringence patterns caused by mechanical stresses was studied. Specimens up to 40 mm diameter were cut at right angles to the growing axis from the crystals obtained by Chokiral'skiy-method growing and by zone melting. The birefringence distributions agree with the initial cation-density distributions determined from dislocation density. It is noted that, under industrial conditions, the method of birefringence analysis requires less labor than the method of dislocation study. Bibliography: 4 items.

Card 1/1

SUB CODE: SS

ENCL: 00

DISTLER, G.I.; KOZAREVA, S.A.

Direct observation of active centers of semiconductor crystal surfaces. Fiz. tver. tela 7 no.8:2450-2458 Ag '65.

(MIR 18:9)

1. Institut kristallografii AN SSSR, Moskva.

DISTLER, G.I., kand.khim.nauk; GUSEVA, L.Ye.

Modeling microcrystals. Priroda 54 no.10:55-57 '65.

(MIRA 18:10)

1. Institut kristallografi AN SSSR, Moskva.

VORONKOVA, Yelena Mikhaylovna; DISTLER, Grigoriy Isaakovich;
GRECHUSHNIK V, Boris Nikolayevich; PMTROV, Igor' Petrovich; ASKOCHENSKIY, A.A., otv. red.

[Optical materials for infrared technology] Opticheskie materialy dlja infrakraasnoi tekhniki; spravochnoe posobie Moskva, Nauka, 1965. 335 p. (MIRA 18:7)

L 6325-66 EWT(m)/T/EWP(t)/EWP(b) SWA(s) IJP(c) JD
ACCESSION NR: AP5019864 UR/0181/65/007/008/2450/2458

AUTHOR: Distler, G. I.; Kobzareva, S. A.

TITLE: Direct observation of active centers of semiconductor crystal surfaces

SOURCE: Fizika tverdogo tela, v. 7, no. 8, 1965, 2450-2458

TOPIC TAGS: electron microscopy, semiconductor crystal, crystal surface, surface active agent, silicon, single crystal

ABSTRACT: The authors describe a new electron-microscopic decoration method, developed at the Institut kristallografii AN SSSR (Institute of Crystallography AN SSSR), and based on selective crystallization of the decorating matter on those surface centers which are most active for the given crystallization chemical reaction. This method was used experimentally to investigate the surface of single-crystal p-type silicon (resistivity ~7 ohm-cm), grown from the melt by the Czochralski method. The surface of the crystal was grown and polished, and then treated with solutions of lead acetate (4%), thio-urea (2%), and caustic potash (2.8%) taken in a ratio 1:3:3. The reaction temperature was 30°C. Corbin replicas of the surface were examined in a Hitachi-II electron microscope. The decoration patterns showed the presence of distinct strips, alternately filled with discrete lead sulfide crystallites and without such crystallites. A distinction is made between

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ACCESSION NR: AP5019864

several crystallization centers having different physical and chemical properties. Several typical decoration patterns and the histograms of the lead sulfide crystals grown on the different active centers are present. It is claimed in the conclusion that these experiments represent the first successful observation of the impurity structure of silicon surfaces with high resolution unattainable by any other method except electron microscopy. The method developed makes it possible to establish on the surface of the crystals the presence and the number of active centers, the geometry of their arrangement, and also the kinetics of their variation resulting from various surface processes. Orig. art. has: 6 figures and 1 formula.

ASSOCIATION: Institut kristallografii AN SSSR, Moscow (Institute of Crystallography, AN SSSR)

SUBMITTED: 16Mar65

ENCL: 00

SUB CODE: SS

NR REF Sov: 005

OTHER: 009

nw
Card 2/2

DISTLER, G.I.; GERASIMOV, Yu.M.; BORISOVA, N.M.

Direct method for studying the electric microrelief of crystalline
surfaces. Dokl. AN SSSR 165 no.2:329-331 N '65.

(MIRA 18:11)

1. Institut kristallografii AN SSSR. Submitted March 18, 1965.

L 22895-66 EWT(1)/EWT(m)/T/EWP(t)/EWA(h) IJP(c) JD/AT
ACC NR: AP5006064 SOURCE CODE: UR/01B1/66/008/002/0600/0601

AUTHOR: Distler, G. I.; Kislovskiy, L. D.

ORG: Institute of Crystallography, Moscow (Institut kristallografi)

TITLE: Hyperfine structure of the phase boundary of a pn junction as obtained
from electron microscope data

SOURCE: Fizika tverdogo tela, v. 8, no. 2, 1966, 600-601

TOPIC TAGS: hyperfine structure, fine structure, pn junction, electron microscopy,
crystal surface, surface property, crystal growth, single crystal

ABSTRACT: After pointing out that any phase boundary should possess a fine structure and a hyperfine structure, the authors describe a high-resolution study of the hyperfine structure of the phase boundary of microscopic pn junctions, carried out by means of an electron-microscopic method for determining the electric microrelief of crystalline surfaces, developed at the Institute of Crystallography AN SSSR and described earlier (DAN SSSR v. 165, 329, 1965). The method consists of decorating local stressed microscopic surface regions by means of charged microparticles. The junctions investigated were alternations of microscopic regions with charge impurities of opposite sign, occurring under nonstationary conditions of crystal growing

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L 22895-66

ACC NR: AP6006864

by drawing from the melt. Single crystals grown by the Czochralski method and cut parallel to the growth axis were investigated. The decoration patterns have shown clearly that the structure of the boundary of the layers differs from the structure of the layers themselves, thus demonstrating the existence of a hyperfine structure. Within the layers, microscopic particles have a random distribution, but on the phase boundaries they consist of definite bunchings of decorating microparticles, indicating a regular clustering of the impurity centers on the phase boundary. The clustering exhibits a quasiperiodicity with period $0.2\text{--}0.4 \mu$. Further electron microscopic investigations of phase boundaries with small surface energies are expected to confine the hyperfine structure of these boundaries in both crystalline materials and biological systems. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 09Sep65/ ORIG REF: 001/ OTH REF: 005

Card 2/2 BLC

ACC NR: AP6011584

SOURCE CODE: UR/0051/66/020/003/0541/0541

AUTHORS: Distler, G. I.; Kotov, A. V.; Kortukova, Ye. I.; Lebedeva, V. N.

ORG: none

52

TITLE: New infrared polarization textures

51

B

SOURCE: Optika i spektroskopiya, v. 20, no. 3, 1966, 541

TOPIC TAGS: light polarization, polarization filter, ir optic system, ir spectroscopy

ABSTRACT: This is a continuation of earlier work (Opt. i spektr. v. 5, 219, 1958 and v. 4, 419, 1958) done at the Institute of Crystallography AN SSSR on the creation of optical textures that polarize infrared radiation. The present note describes new optical textures (PTI-3) which polarize radiation up to 6.5μ . The textures have sufficiently high transparency and high degree of polarization. A plot of the polarization curves and a table listing the transmission and degree of polarization for different wavelengths are presented. The table shown of the spectral transmission of the textures reaches 40% and their degree of polarization is close to 100%. The samples have absorption bands at

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UDC: 535.5-15

L 27211-66

ACC NR: AP6011584

3, 3.4, and 5.8 μ ; due respectively to the vibrations of the hydroxyl, methylene, and carbonyl groups of the polyvinyl alcohol binding medium. The textures can endure temperatures to at least 100C for a long time without noticeable change in the optical characteristics. They should find application in the infrared spectroscopy and in optical instrument building. Orig. art. has: 1 figure and 1 table.

SUB CODE: 20 SUBM DATE: 07Aug65 ORIG REF: 002

Card

2/2 C U

ACC NR: AM6004737

Monograph

UR/

Voronkova, Yelena Mikhaylovna; Grechushnikov, Boris Nikolayevich; Distler, Grigorij Isaakovich; Petrov, Igor' Petrovich

Optical materials for infrared engineering; a reference edition (Opticheskiye materialy dlya infrakrasnoy tekhniki; spravochnoye izdaniye) Moscow, Iz-dvo "Nauka", 1965. 335 p. illus., biblio., index. (At head of title: Akademiya nauk SSSR. Institut kristallografii) Errata slip inserted. 3,000 copies printed.

TOPIC TAGS: ir optic material, optic crystal, optic glass, plastic lens

PURPOSE AND COVERAGE: The book is devoted to the properties of crystalline substances which are most important for use as optical materials in infrared technology. It contains data on optical, thermal, mechanical, electrical, and other characteristics which are necessary for effective utilization of these materials. All the necessary data, which are scattered in numerous books and original articles, have been gathered together and 74 materials, which are either already widely used in infrared techniques or are quite promising, have been selected as a result of an analysis of the large number of literature data. This includes also the most interesting types of glass and plastics. The book is in the form of a handbook with the characteristics of each individual material described in detail. Authors are grateful to L. D. Kislovskiy for valuable advice and remarks, Professor M. V. Klassen-Neklyudova for valuable critical remarks, and I. M. Sil'vestrova and L. A. Shuvalov for help with the work.

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UDC: 548.0 : 535/539(038)

ACC NR: AM6004737

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Ch. III. Comparative characteristics of optical materials -- 20
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Literature -- 307
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SUB CODE: 11, 20/ SUBM DATE: 20Apr65/ ORIG REF: 070/ OTH REF: 641

Card 2/2

ACC NR: AT7002130

(A)

SOURCE CODE: VR/0000/66/000/000/0543/0548

AUTHOR: Grechushnikov, B. N.; Distler, G. I.; Chudakov, V. S.

ORG: none

TITLE: An infrared photoelectric optical method based on polarization.

SOURCE: Vsesoyuznaya konferentsiya po polyarizatsionno-opticheskому metodu issledovaniya napryazheniy. 5th, Leningrad, 1964. Polyarizatsionno-opticheskiy metod issledovaniya napryazheniy (Polarizing-optical method of investigating stresses); trudy konferentsii. Leningrad, Izd-vo Leningr. univ., 1966, 543-548

TOPIC TAGS: IR scanning, optic analysis, optic scanning, IR analysis, IR system, elasticity

ABSTRACT: Application of IR to optical-electronic measurement of elastic deformations in opaque (to the visible spectrum) materials is described. The method consists in scanning of the sample by a narrow beam of infrared radiation, registering the transmitted radiation with an IR detector, converting the resultant electrical currents after amplification into visible light of varying intensity in a lamp, and recording this visible light on photographic film. The intensity of recorded light depends on the transmittance and birefringence of a given sample. In this manner elastic changes due to pressure in normally opaque materials, such as semiconductors, plastics, cer-

Card 1/3

ACC NR: AT7002130

tain types of glass, etc., can be investigated and recorded. The basic equipment, a polariscope, is shown in Figure 1. The wavelength of the IR radiation can be selected for best transmission through the given material. For kinematic studies of material deformation due to stress as a result of heat, another instrument was devised and is shown in Figure 2. In this instrument the intensity of radiation transmitted

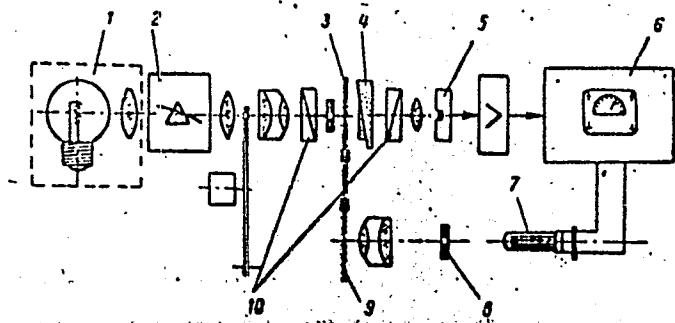


Fig. 1. PIK-1 Polariscope

1--light source; 2--monochromator; 3--sample; 4--wedge compensator; 5--IR detector;
6--amplifier; 7--neon lamp; 8--aperture; 9--photographic plate; 10--IR polarizers.

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ACC NR: AT7002130

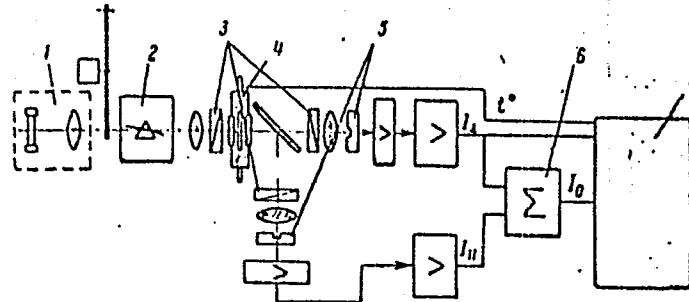


Fig. 2. 1--light source;
2--monochromator; 3--IR po-
larizers; 4--thermal cham-
ber; 5--IR detectors; 6--sum-
ming amplifier; 7--multi-
channel recording poten-
tiometer.

through the sample (located in the thermal chamber) is recorded with respect to temperature variations. The authors report the results of some experiments carried out with these two instruments. Orig. art. has: 8 figures.

SUB CODE: 20,09,14 / SUBM DATE: 14Jun66 / ORIG REF: 005 / OTH REF: 001

Card 3/3

REKHARSKIJ, V.I.; DISTLER, V.V.

Feldspar-quartz formation of molybdenum deposits. Geol.rud.mestorezhy.
7 no.4:91-93 Jl-Ag '65. (MIRA 18:2)

1. Institut geologii rudnykh mestorozhdeniy, petrografii, mineralogii
i geokhimii AN SSSR, Moscow.

DISTLER, V.V., inzh., red.; PEVZNER, A.S., red. izd-va; MEYERMAN, T.M.,
red.

[Manual of consolidated indices of the cost of planning and research]
Spravochnik ukupnennykh pokazatelei stoimosti proektnykh i izysku-
tel'skikh rabot. Vvoditsia v deistvie s 1 ianvaria 1958 g. Pt.5.
[Enterprises of nonferrous metallurgy] Predpriatiia tsvetnoi metal-
lurgii. 1958. 49 p. Moskva, Gos. izd-vo lit-ry po stroit. i arkhit.
(MIRA 11:8)

1. Russia (1923- U.S.S.R.) Gosudarstvennyy komitet po delam
stroitel'stva.

(Nonferrous metal industries)

DISTLER, V.V.; POPOV, S.D.; OVCHAROVA, Z.F.

Struverite, an accessory mineral of granites. Trudy Min. muz.
no.14:209-214 '63. (MIRA 16:10)

(Transbaikalia--Struverite)
(Transbaikalia--Granite)

YEVSEYENKO, L.S.; DISVETOVA, V.V.; KORMAN, D.B.; LEVITIN, Ye.I.;
LEYENSON, B.P.; ORLOVA, R.S.; SHIYATAYA, O.K.

Results of the clinical use of 5-fluorouracil. Vop.onk.
11 no.11:69-75 '65.

(MIRA 19:1)

1. Iz khimioterapevticheskogo otdeleniya Moskovskoy
gorodskoy klinicheskoy bol'nitsy No.1 imeni N.I.Pirogova
(glavnyy vrach zasluzhennyy vrach RSFSR L.D.Chernyshev).

BITE, Pal, dr. (Budapest, VII., Rottenbiller u. 26); PONGRACZ-STERK,
Lili (Mrs) (Budapest, VII., Rottenbiller u. 26); DISZLER,
Eszter (Mrs) (Budapest, VII., Rottenbiller u. 26)

Preparation of ajmaline derivatives. Pt.1. Acta chimica Hung
38 no.1:47-52 '63.

1. Research Institute for Pharmaceutical Industry, Budapest.

BITE, Pal; PONGRACZNE STERK, Lili; DISZLER, Eszter

Synthesis of ajmaline derivatives. I. Magy kem folyoir 69 no.2:84-87
F '63.

1. Gyogyszeripari Kutato Intezet, Budapest.

DISZTHELYI, LA JOS

HUNGARY/Nuclear Physics - Nuclear Reactions

C-5

Abs Jour : Ref Zhur - Fizika, No 7, 1958, No 15121

Author : Ero Janos, Diszthelyi Lajos

Inst : Kozponti Fizikai Kutato Intezet Atomfizikai Osztaly

Title : Cross Section of Nuclear Reaction $I^{127}(t, \gamma) I^{126}$

Orig Pub : Magyar fiz. folyoirat, 1957, 5, No 4, 301-310

Abstract : The crystal NaI(Tl) has been exposed to gamma obtained as a result of the $Li(t, \gamma)$ reactions. By measuring the activity of the I^{126} nucleus formed in the irradiated crystal, and also by counting the number of scintillations occurring thereby, the cross section of the reaction $I^{127}(t, n)I^{126}$ was determined to be 125 ± 6 millibarns. By comparing the results obtained with the data on the neutron yield, the authors have determined the cross section of the reaction $(\gamma, 2n)$, which turns out to be 30 ± 20 millibarns. Along with this they determined the ratio of the intensity of K capture by the I^{126} nucleus to the remaining forms of the decay. This ratio is 0.51 ± 0.03 .

Card : 1/1

ACCESSION NR: AR4027672

S/0276/64/000/001/B075/B075

SOURCE: RZh. Tekhnologiya mashinostroyeniya, Abs. 1B402

AUTHOR: Ditchuk, V. Z.

TITLE: The effect of processing on dielectric losses in aluminum oxide powder

CITED SOURCE: Tr. Odessk. un-ta. Yestestv. n., v. 152, no. 8, 1962, 41-42

TOPIC TAGS: aluminum oxide, aluminum oxide powder, dielectric loss

TRANSLATION: The dielectric permeability of Al_2O_3 powder was studied with the aid of a KV-1 Q-meter in the $5 \cdot 10^4 - 3 \cdot 10^7$ c/s frequency range. The author studied the effect of processing in H_2O , H_2O_2 , and calcination at 400°C.

He found that the processing of Al_2O_3 parts in H_2O_2 improves their dielectric characteristics. Bibliography with 4 titles.

DATE ACQ: 03Mar64

SUB CODE: ML

ENCL: 00

Card 1/1

L 30938-66

ACC NR: AP6023135

SOURCE CODE: CZ/0060/65/000/005/0197/0199

AUTHOR: Morsky, V. (Major; Doctor of medicine); Dite, B. (Colonel; Doctor of medicine; Candidate of sciences)

26
B

ORG: Military Hospital, Jaromer (Vojenska nemocnice)

TITLE: Results of spine examinations in a group of paratroopers

SOURCE: Vojenske zdravotnické listy, no. 5, 1965, 197-199

TOPIC TAGS: military personnel, skeletal mechanics, bone disease, bone, injury, military medicine

ABSTRACT: 100 parachutists aged between 20 and 35 years were examined; the minimum number of jumps in the group was 25, the maximum 2480. In 27% congenital anomalies were found, degenerative changes in spinal discs were found in 30%; this is lower than findings made in a group of people subjected to occupational microtraumas. Small scolioses and rotoscolioses were found in 48%. 8% complained of subjective difficulties. X-ray examinations should be used to maintain constant observation of the condition of the spines of paratroopers. Orig. art. has: 4 tables. [JPAS]

SUB CODE: 06 / SUBM DATE: none / ORIG REF: 010 / OTH REF: 005

Card 1/1 CC

UDC: 616.711-07:358.4

09/5

345

NETTL, S.; STEINHART, L.; DITE, B.

Normal deep cerebral phlebographic picture according to clinical data
of the J.E. Purkyne VIA Neurological Clinic. Cesk. neur. 22 no.3:159-
163 May 59.

1. Neurologicka klinika VIA J. Ev. P., radiologicka klinika VIA J.
Ev. P. a radiologicke oddeleni PN Jaromer.
(ANGIOGRAPHY, CEREBRAL,
normal standards of deep phlebography (Cz))

STEINHART, L.; ENDYRS, J.; DITE, B.; SLEZAK, P.; PROCHAZKA, J.; BELOBRADEK, Z.;
FETIHL, M.

The angiographic picture of the mitral orifice. Cor vasa 4,
no.3:212-218 '62.

1. Centre for Cardiac Surgery, Faculty of Medicine, Charles University
Hradec Kralove.

(MITRAL VALVE radiography) (ANGIOCARDIOGRAPHY)

SLEZAK, Premysl; STEINHART, Leo; FRANK,M.; JURIN, Ivo; DITE, B.

Congenitally corrected transposition of the great vessels
in the angiocardiographic picture. Sborn.ved.prac.lek.fak.
Karlov.Univ.(Hrad.Kral.) 6 no.3:311-318 '63.

1. Radiologicka klinika (prednosta: DrSc., prof., MUDr. J.
Bastecky); Detska klinika (prednosta: DrSc., prof., MUDr.
J.Elecha) a Chirurgicka klinika (prednosta: prof., MUDr.
J.Prochazka), Universita Karlova.

*

STEINHART, L.; ENDrys, J.; SLEZAK, P.; PROCHAZKA, J.; DITE, B.; PETRLE, M.;
HELOBRADEK, Z.; KOSMAK, I.; FRANK, M.

Transseptal levography in congenital and acquired diseases of
the heart and of the large vessels. Cesk. radiol. 19 no. 4/5:
253-259 Ag '65.

I. Radiologicka, chirurgicka, I. interni, II. interni a detska
klinika lekarstve fakulty Karlovy University v Hradci Kralove,
CSSR.

SHTAYNGART, Leo [Stajnhart, Leo], doktor meditsiny; DITE, Bogumil [Dite, Bohumil], doktor meditsiny; PETRLE, Miroslav, doktor meditsiny; PROKHAZKA, Jaroslav [Prochazka, Jaroslav], prof., doktor meditsiny; BELOBRADEK, Zdenek, doktor meditsiny; TOMANEK, Yuriy [Tomanek, Jiri], doktor meditsiny

Significance of angiocardiography in the diagnosis of congenital heart defects with left-to-right shunt. Khirurgiia no.10:56-63
'64. (MIRA 18:8)

1. Kardiologicheskiy tsentr klinicheskoy bol'nitsy v Gradtsse Kralove i rentgenologicheskoye otdeleniye garnizonnoy bol'nitsy, Yaromerzh.

HORSKY, V., major MUDr.; DITTE, B., plukovnik MUDr.

Results of the examination of the spine in a group of paratroopers.
Voj. zdrav. listy 24 no.5:197-199 0 '65.

1. Vojenska nemocnice v Jaromeri.

NETTL, Sasa; STEINHART, Leo; SLEZAK, Premysl; DITE, Bohumil; PUDIL, Vladimir.

Deep brain phlebogram in anteroposterior projection in expansive intracranial processes. Sborn. ved. prac. lek. fak. Karlov. Univ. 8 no.2:199-205 '65.

1. Neurologicka klinika (prednosta: prof. MUDr. M. Sercl, DrSc.); Radiologicka klinika (prednosta: prof. MUDr. J. Bas-tecky, DrSc.) Lekarske fakulty Karlovy University v Hradci Kralove.

DIT&J
UHER, M.; DITE, J.

Experiences with streptomycin in the treatment of osteoarticular tuberculosi. Lek. listy, Brno 6 no.16:481-484 15 Aug 51. (CIML 21:4)

1. Of the Orthopedic Clinic (Head--Prof. Jaroslav Vavrdia, M.D.) of Charles University Branch in Hradec Kralove.

EXCERPTA MEDICA Sec 9 Vol 13/4 Surgery Apr 59

1764. (563) STIFFNESS OF THE INTERPHALANGEAL JOINTS OF THE HAND
AND ITS SURGICAL TREATMENT - Ztuhlosť mezičlánkových kľoubov ruky
a její chirurgické liečení - Dříš J., Ortop. Odd. OÚNZ, Náchod - ACTA
CHIR. ORTHOP. TRAUM. CECH. 1958, 25/2 (101-103)

Indications and results of capsulotomy, arthroplasty and arthrodesis are present-
ed.

(IX, 19^a)

DITE, Karel

Rotacni tvareni nálož. (Rotary Method of Shaping Sheet Metal. 1st ed. illus.)
Prague, SNTL, 1957. 68 p.

Description of tested and used rotary methods of shaping sheet metal. Examples
of manufacturing sheet metal kitchen utensils.

Bibliograficky katalog, CSR, Ceske knihy, No. 34. 1 Oct 57. p. 742.

DITERIKHS, D.D.

NEVSKAYA, A.I.; DITERIKHS, D.D. (Moskva)

Problems in labor hygiene in the production of hydrogen peroxide by
the electrochemical method. Gig.truda i prof.zab. no.4:16-23
Jl-Ag '57. (MIRA 10:11)

1. Institut gigiyeny truda i profzabolevaniy AMN SSSR.
(HYDROGEN PEROXIDE)
(ELECTROCHEMISTRY, INDUSTRIAL-HYGIENIC ASPECTS)

MATSAK, Valentin Gavrilovich; KHOTSYANOV, Lev Kipriyanovich; DITERIKHS,
D.D., red.; ZAKHAROWA, A.I., tekhn.red.

[Hygienic significance of the rate of vaporization and of the
vapor pressure of toxic substances used in industry] Gigieni-
cheskoe znachenie skorosti ispareniia i davlenia para toksi-
cheskikh veshchestv, primenyaemykh v proizvodstve. Moskva,
Gos.izd-vo med.lit-ry, 1959. 230 p. (MIRA 13:2)
(Industrial toxicology)

"APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0

KHOTSIANOV, L.K.; MATSAK, V.G.; DITERIKHS, D.D.; ISAEV, N.S.; SUPONITSKIY, M.Ya.,
kand.med.nauk

"Hygienic principles of industrial ventilation and its operation"
by L.K.Khotsianov and others. Gig.i san. 24 no.8:86-87 Ag '59.
(MIRA 12:11)
(VENTILATION) (KHOTSIANOV, L.K.)

APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0"

DITERIKHS, D.D. (Moskva)

Improvement of working conditions in the assembly of soft tanks.
Gig. truda i prof. zab. 4 no.6:12-16 Je '60. (MIRA 15:4)

1. Institut gigiyeny truda i professional'nykh zabolеваний AMN SSSR.
(RUBBER INDUSTRY AND TRADE--HYGIENIC ASPECTS)

DUTERIKHS, E.M.
E.A.

The apatite deposits of the Chibin tundra A. F. Svetlovskii and V. M. Duterikhs. *Bull. Acad. Sci. U.R.S.S. Ser. geol.* 1936, No. 1, 50-63; *Chem. Zentr.* 1940, I, 651. The apatite and titanite formations of the region are explained as magmatic formations of epigenetic type. The geological and petrographical relations are described. M. G. Moon

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DITERIKHES, E.M.; KULAKOV, V.S.; SVYATLOVSKIJ, A.Ye.; ZAVARITSKIY, A.N., akademik, glavnnyy redaktor; KULAKOV, V.S. geolog; TROTSKIY, A.N. khimik.

Parasitic craters of Klyuchevskaya Sopka, arising in 1932. Trudy Kamch. vulk.sta. no.2:3-23 '48. (MLRA 6:5)

1. Kamchatskaya vulkanologicheskaya stantsiya. (Klyuchevskaya Sopka)

GUREVICH, L.V.; DITERIKHS, N.D.; LUCHAY, G.A.; NIKOL'SKAYA, N.Ye.

Using plastics in the rolling stock and in the electric power
supply of public transportation. Sbor.nauch.rab.AKKH no.13:192-
202 '62. (MIRA 16:4)

(Plastics)
(Local transit—Equipment and supplies)

(1) 10

Scientific-Technical-CZECHOSLOVAKIA

BURBA, Vaclav

DITERT, Stanislav

Authors of an article on "New Type of an Electric Infra-reflector" tested by the Electro Praga Plant.
(Pozarni Technika, Prague, No 11, 1963, pp 206-207)

(2) 21

ACC NR: AP6033576

SOURCE CODE: UR/0181/66/008/010/3089/3090

AUTHOR: Ditina, Z. Z.; Strakhov, L. P.

ORG: Leningrad State University im. A. A. Zhdanov (Leningradskiy gosudarstvennyy universitet)

TITLE: Paramagnetic centers on the surface of CdSe

SOURCE: Fizika tverdogo tela, v. 8, no. 10, 1966, 3089-3090

TOPIC TAGS: cadmium compound, selenide, microwave spectroscopy, surface property, electron paramagnetic resonance, absorption line

ABSTRACT: The authors report results of an EPR study of the surface of CdSe, using a radiospectrometer (Re-1301) operating at 9300 MHz. To increase the surface, powdered CdSe was crushed in a pestle in air, and the outgassed in $\sim 10^{-6}$ Torr at 450C for several hours, after which the vacuum improved to 10^{-8} torr. Following such a treatment, a broad resonance line was observed at room temperature, with parameters $g = 2.0041$ and $\Delta H = 90\text{e}$. The line increased in amplitude by a factor of several times after cooling to 77K. Additional heating produced a second resonance line ($g = 2.0031$ and $\Delta H = 20\text{e}$) superimposed on the first. Heating the powder to 550-600C left the spectrum unchanged, but at 650C both lines disappeared. Oxygen decreased the intensities of the links and eventually caused them to disappear. It is concluded that

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ACC NR: AP6033576

suitable treatment produces in CdSe two types of paramagnetic centers, which lead to the appearance of broad and narrow EPR lines, respectively. The reversible suppression of the spectrum by adsorption of oxygen indicates that these are surface centers. The results agree with those observed by others. The authors thank A. A. Lebedev for suggesting the topic. Orig. art. has: 1 figure.

SUB CODE: 20/ SUBM DATE: 06Apr66/ ORIG REF: 002/ OTH REF: 005

Card 2/2

"APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0

DITTRICH, V. [A.]

"Tables for Plotting the Position of Ships
by Radio Direction Finding" Uspikhi Matemat,
Nauk, 1, No. 2, 1946

Report U-1493, 27 Sep 1951

APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0"

DITKIN, V.A.

Solution of a problem in thermal conductivity by means of operational calculus. Trudy Mat.inst. 20 77-86 '47.
(MLRA 9:3)
(Heat--Conduction) (Calculus, Operational)

DITKIN, V. A.

Issledovaniye stroyeniya idealov v nekotorykh normirovannykh kol'tsakh. M.,
uchen. zap. un-ta, 30 (1939), 83-130.
K teorii differentsiyal'nogo operatora. DAN, 56 (1947), 779-782.
O polnote sistemy funktsiy. DAN, 56 (1947), 893-901
O reshenii integro-differentsiyal'nogo uravneniya koleblyushchegosya kryla
konechnogo razmaka. Referaty AN, otd. fiz.-matem. nauk (1943-1944), 82.
O chislennom reshenii uravneniya tsirkulyatsii koleblyushchegosya kryla, trudy
matem. in-ta im. Steklova, 20 (1947), 7-38.

SO: Mathematics in the USSR, 1917-1947
edited by Kurosh, A. G.,
Markushevich, A. I.,
Reshevskiy, P. K.
Moscow-Leningrad, 1948

DITKIN, V.A.

Activities of the seminar at the Department of Approximate computation for 1943-1944. Trudy Mat.inst. 20 134-135 '47. (MLRA 9:3)
(Mathematics)

DITKIN V. A.

1947

USSR/Vibration - Measurements
Mathematics, Applied

"The Numerical Solution for the Equation of Circulation of a Vibrating Vane," I. Ya. Akushskiy, V. A. Ditkin, 32 pp

"Trud Mat Inst V. A. Steklov" Vol XX

Determines certain figures characterizing the effectiveness of making the described automation in computing R_1'' and R_2'' . For this purpose, they calculate the spaces of tensors which have functioned in various processes and distribute them in time according to the technical standards of machine operation.

PA 17Tl02

DITKIN, V. A.

"On Completeness of System of Functions," Dok Akad Nauk SSSR, Nova Ser, 56,
No. 9, 1947.

DITKIN, V. A.

V. DITKIN, V. A. Certain formulas for noncommutative operators. Uspeni Matem. Nauk (N.S.) 13, no. 2(24), 214-237
(1948). (Russian)

Let R be a ring with two generators f and g and let A be a linear differentiation operator on Λ (i.e., $A(fg) = (Af)g + f(Ag)$). The author establishes a number of formulas of which a typical one is

$$f(p)g - gf(p) = \sum_{n=1}^{\infty} (-1)^{n-1} p^{-1} f^{(n)}(p) g,$$

here f is a polynomial, $p \in R$, and $x = A^k$ for $k > 0$, where

Ditkin, V. A. On a question about the formal multiplicity of trigonometric series. Doklady Akad. Nauk SSSR (N.S.) 40, 1495-1499 (1948). (Russian)

For $f(z) = \sum_{n=0}^{\infty} c_n z^{i_n}$ and $|z|_{\alpha} \leq Qa_n a_n, 1 \leq a_n \leq Cn^r$, let

$\sum_{n=0}^{\infty} |c_n| a_n < \infty$ and $|s_n| \leq a_n$. Put

$$\sum_{n=0}^{\infty} c_n z^{i_n} = a_n \cdot z_0^{r+1}/(r+2) + \sum_{n=0}^{\infty} s_n z^{-i_n}/(-i_n)^{r+2} = s(t),$$

$$z_0^{r+2}/(r+2) + \sum_{n=0}^{\infty} s_n z^{-i_n}/(-i_n)^{r+2} = o(t).$$

Using Gelfand's [Rec. Math. [Mat. Sbornik] N.S. 9(5)], 51-65 (1941); these Rev. 3, [1] theory of normed rings of trigonometric series, the author proves the following theorem. If $s(z)$ is in (a, b) a polynomial of order not exceeding $r+1$, then $s(t)$ is a polynomial of order not exceeding $r+1$ in every interval complementary to $(a, b) \cap F$, where F denotes the set of zeros of $f(z)$. A corollary of this is the following. In order that the formal product of $\sum c_n z^{i_n}$ and $\sum s_n z^{-i_n}$ converge everywhere to zero, it is necessary that $s(t)$ be a polynomial of order not exceeding $r+1$ in every interval complementary to the set of zeros of $f(z)$.

František Wolf (Berkeley, Calif.).

Source: Mathematical Reviews,

Vol. 10 No. 4

Ditkin, V. A. On certain approximate formulas for the calculation of triple integrals. Doklady Akad. Nauk SSSR (N.S.) 62, 445-447 (1948). (Russian)

The integral of a function f over the volume of the unit sphere is approximated by $\int f d\omega = \sum M_l f(\rho_l, \theta_l, \varphi_l)$, where ρ, θ, φ are spherical coordinates. A general formula is obtained from

$$J = (4\pi)^{-1} \int f d\omega = \sum_{l=0}^{\infty} c_l \sum_{p=0}^{2l} \sum_{r=0}^{l-p} I_r J_{rp} f(\rho_r, \theta_r, \varphi_r/p)$$

correct for all polynomials of degree $4p - 1$ if ρ_r are chosen as the positive roots of $S_{4p}(x) = 0$, where $S_k(x)$ form an orthogonal set of polynomials with the weight-function x^k in the interval $(-1, 1)$ and c_l, b_r are the

x , the roots of $P_{4p}(x) = 0$, $P_k(x)$ being the Legendre polynomials. The author also gives the formulae

$$J = \frac{1}{18} O\left(\sqrt{\frac{3}{5}}\right),$$

$$J = \frac{4}{75} f(0, 0, 0) + \frac{7}{300} I\left(\sqrt{\frac{3}{7}}\right)$$

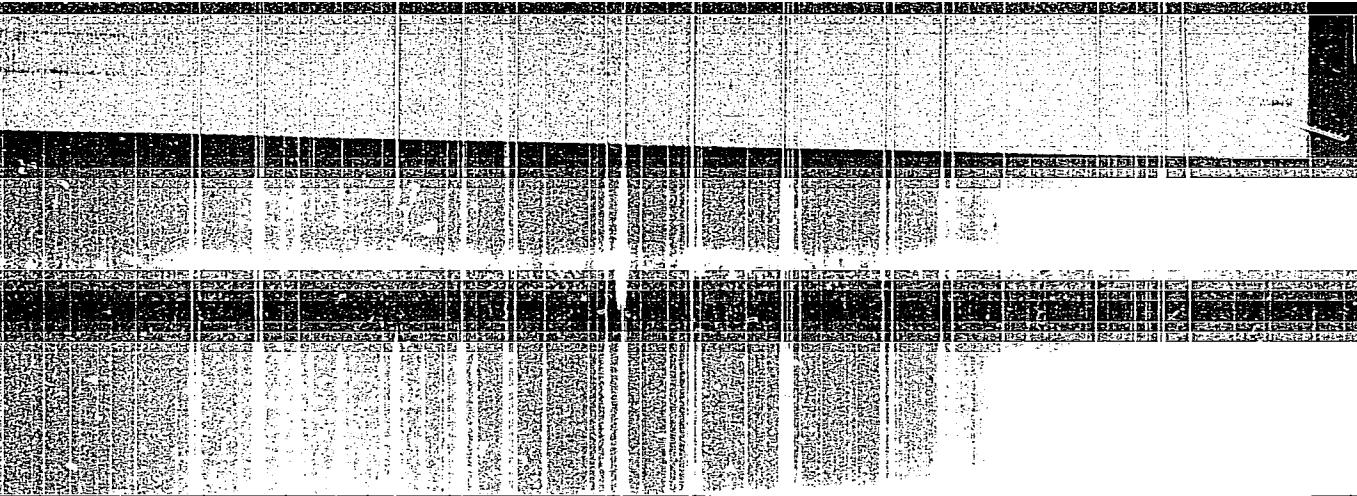
$$J = \frac{16}{525} f(0, 0, 0) + \frac{27}{1400} I\left(\sqrt{\frac{5}{9}}\right) + \frac{1}{280} D(1),$$

correct, respectively, for polynomials of degree not exceeding 3, 5, 7.

Source: Mathematical Reviews,

Vol 10 No. 5

"Differential Operator and Related Functional Transformations." Thesis for degree of Dr. Physicomathematical Sci. Sub 16 Jun 49, Mathematics Inst imeni V. A. Steklov, Acad Sci USSR.



158T59

DITKIN, V. A.

USSR/Mathematics - Orthogonal Systems Mar/Apr 50
Fourier Analysis

"Concerning the Completeness of One System of Trigonometric Functions," V. A. Ditkin, 2 pp

10
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9

*Ditkin, V. A., i Kuznetsov, P. I. Spravočnik po operacionnoj issledovaniyu. Osnovy teorii i tablitsy formul. [Handbook of operational calculus; Fundamentals of the theory and tables of formulas.] Gosudarstv. Izdat. Tehn.-Teor. Lit., Moscow-Leningrad, 1951. 255 pp. 7.30 rubles.

The first part (86 pp.) of this volume gives a summary (with proofs) of the more important properties of operational calculus. The material is organized in 12 Sections. 1. Introduction. 2. The Laplace integral and its principal properties. 3. Operators (based mainly on the Laplace-Carson integral) and the basic properties of the operators $D = d/dt$ and β . 4. Duhamel's integral (convolution). 5. Functions of D . 6. Some special operators (mostly algebraic functions of D , but e^{-tD} and $D^{\alpha}e^{-tD}$ are also treated). 7. Evaluation of operational expressions by contour integration (the complex inversion formula and some of its applications). 8. Composite operators of the form $a(D) \cdot f(a(D))$.

The second part (159 pp.) contains an extensive table of transform pairs $f(t)$ and $F(p) = p \int_0^\infty f(t)e^{-pt}dt$ arranged according to $F(p)$. There is a list (8 pp.) of notations and definitions of higher functions followed by sixteen sections.

O. General formulas (55). I. Rational functions (163). II. Irrational functions and powers with arbitrary indices (171). III. Exponential functions (212). IV. Trigonometric and hyperbolic functions (89). V. Logarithmic, inverse trigonometric, and inverse hyperbolic functions (178). VI. Gamma and related functions (57). VII. Exponential integral and related functions (50). VIII. Confluent hypergeometric functions and particular cases (90). IX. Bessel and related functions (179). X. Legendre functions (15). XI. Elliptic and similar integrals (25). XII. Theta functions (15). XIII. Mathieu functions (12). XIV. Hypergeometric series (55). XV. Miscellaneous functions (38).

DITKIN, V.A., professor, redaktor.

[Table of Fresnel integrals] Tablitsy integralov Frenelia. Moskva,
Izd-vo Akademii nauk SSSR, 1953. 267 p.
(MIRA 7:8)

I. Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'-
noy tekhniki.
(Integrals)

"APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0

DITKIN, V.A.; LYUSTERNIK, L.A.

One application of practical harmonic analysis on the sphere. Vych.
mat.i vych.tekh. no.1:3-13 '53.
(Spherical harmonics) (MIR 7:9)

APPROVED FOR RELEASE: 06/12/2000

CIA-RDP86-00513R000410420019-0"

KARPOV, K.A.; DITKIN, V.A., prof., otv. red.; KOPNOV, V., red.izd-va;
SHEVCHENKO, G.N., tekhn. red.

[Tables of Lagrangian interpolation coefficients; supplement
to the tables of the function $w(z) = e^{-z^2} \int_0^z e^{x^2} dx$ in a complex
region] Tablitsy koeffitsientov interpolatsionnoi formuly
Lagranzha; prilozhenie k tablitsam funktsii $w(z) =$
 $e^{-z^2} \int_0^z e^{x^2} dx$ v kompleksnoi oblasti. Moskva, Izd-vo AN SSSR, 1954. 78 p.
(Mathematics--Tables, etc.) (Interpolation) (MIRA 16:8)

DITKIN, V.A., professor; KOPNOV, Ye.V., redaktor; SHEVCHENKO, G.N., tekhnicheskiy redaktor.

[Tables of an integral exponential function] Tablitsy integral'noi pokazatel'noi funktsii. Moskva, Izd-vo Akademii nauk SSSR, 1954.
300 p.

(MLRA 7:11)

1. Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy tekhniki.
(Functions, Exponential) (Integrals)

DITKIN, V.A., professor, redaktor; KOPNOV, Ye.V., redaktor; SHEVCHENKO, G.N.,
tekhnicheskiy redaktor.

[Tables of sine and cosine integrals] Tablitsay integral'noho sinusa
i kosinusa. Moskva, Izd-vo Akademii nauk SSSR, 1954. 472 p. (MLRA 7:11)

1. Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy
tekhniki.
(Trigonometrical functions)

AKUSHSKIY, I.Ya.; DITKIN, V.A.

Numerical solution for the equation of circulation of a vibrating
airfoil. Trudy Mat.inst. 20 7-38 '54.
(Aerodynamics) (Calculating machines) (MLRA 9:3)

DITKIN, V.A., professor, redaktor; DOBROSMYSLOV, A.A., redaktor; SHEVCHENKO,
G.N., tekhnicheskiy redaktor.

[e^x and e^{-x} tables] Tablitsay e^x i e^{-x} . Moskva, Izd-vo Akademii nauk
SSSR, 1955. 144 p.
(MIRA 8:5)

1. Akademiya nauk SSSR. Institut tochnoy mekhaniki i vychislitel'noy
tekhniki.

(Mathematics--Tables)

KARPOV, Konstantin Andrianovich; RAZUMOVSKIY, Spartak Nikolayevich;
DITKIN V.A., professor; otvetstvennyy redaktor; MAKUNI, Ye.K.,
tekhnicheskiy redaktor

[Tables of integral logarithms] Tablitsy integral'nogo logarifma.
Moskva, Izd-vo Akademii nauk SSSR, 1956. 316 p. (MLRA 9:10)
(Logarithms)

KARMAZINA, Lena Nikolayevna; KUROCHKINA, Liana Vasil'yevna; DITKIN, V. A.,
professor, otvetstvennyy redaktor; MAKUNI, Ye. V., tekhnicheskiy
redaktor

[Tables for interpolation of coefficients] Tablitsy interpolatsion-
nykh koefitsientov. Moskva, Izd-vo Akad. nauk SSSR, 1956. 365 p.
(Interpolation) (Mathematics--Tables, etc) (MIRA 10:4)

DEKANOSIDZE, Yelena Nikolayevna; DITKIN, R.A., professor, otvetstvennyy
redaktor; MARUNI, Ye.V., tekhnicheskiy redaktor

[Tables of cylindrical functions of two variables] Tablitsy tsilindri-
cheskikh funktsii ot dvukh peremennykh. Moskva, Izd-vo Akademii nauk
SSSR, 1956. 491 p.
(Functions--Tables, etc.)

(MLRA 9:11)

DITKIN, V.A.

AUTHOR: See Table of Contents Call Nr: AF 1139270

TITLE: Computing Mathematics (*Vychislitel'naya matematika*)
Collection 1 (Sbornik I)

PUB.DATA: Izdatel'stvo Akademii nauk, Moscow, 1957, 170 pp.,
5,000 copies.

ORIG.AGENCY: Akademiya nauk S.S.R. Vychislitel'nyy tsentr.

EDITORS: Editor in Chief: Ditkin, V.A., Prof., Editor of the
Publishing House; Samsonenko, L.V; Tech.Ed.:
Makum, Ye.V.

PURPOSE: This book contains 12 scientific articles concerning
problems in computing mathematics.

Card 1/8

Computing Mathematics (Cont.)

Call Nr: AF 1139270

COVERAGE: The contributions contained in this book are Russian.
See Table of Contents for personalities and bibliography.

TABLE OF CONTENTS: 1. Lyusternik, L.A. The Finite-difference
Analogue of Green's Function in the Three-
dimensional Case. 3

The article has 4 references, 3 of which are
Russian, and 1 German. Shura-Bura, M.R.,
is mentioned.

2. Vorob'yev, Yu.A. Method of Moments in the
Problem of Linear System Oscillation.
A. N. Krylov is mentioned. 23

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Computing Mathematics (Cont.)

Call Nr: AF 1139270

3. Volkov, Ye.A. On the Solution of the First Boundary Problem for the Laplace equation using the Method of Meshes.

34

The article has 12 references, 9 of which are Russian and 3 German. Names of U.S.S.R. personalities mentioned include: Gershgorin, S.A., Gyunter, N.M., Petrovskiy, T.G.) Smirnov, V.I., Sobolev, S.L., Sutyusheva, Sh.Sh., and Shura-Bura, M.R.

Card 3/8

Computing Mathematics (Cont.)

Call Nr: AF 1139270

4. Volkov, Ye.A. On One Way of Increasing the Accuracy
of the Method of Meshes for the Solution of the
Poisson Equation. 62

The article has 7 references, 5 of which are Russian
(one translation), and 2 English. Names of U.S.S.R.
personalities mentioned include: Volkov, Ye.A.,
Gyunter, N.M., and Mikeladze, Sh.Ye.

5. Sanl'yev, V.K. On One Class of Elliptical Equations
Solved by Means of Finite Differences. 81

The article has 3 references, all Russian. Names
of U.S.S.R. personalities mentioned include:
Sobolev, S.L., and Ladyzhenskaya, O.A.

Card 4/8

Computing Mathematics (Cont.)

Call Nr: AF 1139270

6. Sanl'yev, V.K. On the Error Bounds of Eigenfunction Calculated by Means of Finite Differences 87

The articles has 7 references, 4 of which are Russian, 1 English, 1 German, and 1 French. Names of U.S.S.R. personalities mentioned include: Ladyzhenskaya, O.A., Lyusternik, L.A., and Shura-Bura, U.R.

7. Stesin, I.M. Transformation of Orthogonal Expansions into the Sequences of Convergents of Continued Fractions. 116

The article has 5 references, all Russian. Lyusternik, L.A., is mentioned.

Card 5/8

Computing Mathematics (Cont.)

Call Nr: AF 1139270

8. Vzorova, A.I. On the Construction of Orthogonal Polynomials on a Family of Ellipses. 120

The article has no references. I.N. Vekua is mentioned.

9. Alikhashkin, Ya.I. On the Methods of Calculation of the Rate of Pressure Flow into the Imperfect Well. 131

The article has 5 references, all Russian. The personalities mentioned include: Charnyy, I.A., Fichtengol'ts, G. M., and Salekhov, G.S.

Card 6/8

Computing Mathematics (Cont.)

Call Nr: AF 1139270

10. Alikhashkin, Ya.I. Solution of the Imperfect Well Problem using the Straight Line Method. 136
The article has 7 references, all Russian (1 translation). The personalities mentioned include: Charnyy, I.A.; Glogovskiy, M.M., Faddeyeva, V.N.; Gahtmakher, F.R., and Kreyn, M.G.
11. Khovanskiy, G.S. On the Substitution of Logarithmic Functions by power function for approximate nomographing. 153
The article has 4 references, all Russian. The personalities mentioned include: Andriyashev, M.M., Adamov, G. A., and Agroskin, I.I.

Card 7/8

DITKIN, V.A.

SUBJECT USSR/MATHEMATICS/Functional analysis CARD 1/3 PG - 837
 AUTHOR DITKIN V.A.
 TITLE Laplace transformations for functions being defined on the
 whole line.
 PERIODICAL Doklady Akad.Nauk 112, 191-194 (1957)
 reviewed 6/1957

Let the function $f(x)$ belong to the set S if

- 1) $f(x)$ is defined almost everywhere on $-\infty < x < \infty$ and L-integrable on every finite interval,
- 2) there exists at least one pair of values (p_1, p_2) such that

$$\int_0^{\infty} f(x)e^{-p_1 x} dx \quad \text{and} \quad \int_{-\infty}^b f(x)e^{-p_2 x} dx$$

converge.

Let $S_+ \subset S$ be the set of all $f(x)$ for which $f(x) \equiv 0$ for $x < a$. Likewise let

$S_- \subset S$ be the set of all $f(x)$ which vanish for $x > b$. The Laplace transformation

$$\bar{f}_1(p) = \int_{-\infty}^{\infty} f_1(x)e^{-px} dx, \quad f_1(x) \in S_+$$

Doklady Akad.Nauk 112 191-194 (1957)

CARD 2/3

PG - 837

changes S_+ to the set of functions of a complex variable $p = \sigma + i\tau$; let this set be \bar{S}_+ . Likewise to the set S_- there corresponds the set \bar{S}_- by means of the transformation

$$\bar{r}_2(p) = - \int_{-\infty}^{\infty} f_2(x) e^{-px} dx, \quad f_2(x) \in S.$$

For a usually defined addition and multiplication with a complex number the sets S_+ and S_- are linear. Let \mathcal{M} be the direct sum of S_+ and S_- . Let $\mathcal{M}_0 \subset \mathcal{M}$ consist of all pairs $(\theta(p), \bar{\theta}(p))$, where

$$\theta(p) = \int_a^b \theta(x) e^{-px} dx$$

and $\theta(x)$ belongs to the intersection of S_+ and S_- . Let \bar{S} be the factor set $\mathcal{M}/\mathcal{M}_0$.

Theorem: The linear sets S and \bar{S} are isomorphic. Let $F_1(p)$ be the quotient of two functions of \bar{S}_+ and $F_2(p)$ be the quotient of two functions of \bar{S}_- .

Doklady Akad.Nauk 112, 191-194 (1957)

CARD 3/3

PG - 837

Let the set of the pairs $(F_1(p), F_2(p))$ be $\overline{\mathcal{M}}$. Let to every pair (F_1, F_2) of $\overline{\mathcal{M}}$ correspond an operator F . Let Ω_F be the set of all elements $(\bar{f}_1(p), \bar{f}_2(p)) \in \mathcal{M}$ for which $(F_1(p)\bar{f}_1(p), F_2(p)\bar{f}_2(p))$ belongs to $\overline{\mathcal{M}}$ too. To the set Ω_F there corresponds a certain subset of \overline{S} . Let the inverse image of this subset for the isomorphism $S \leftrightarrow \overline{S}$ be Ω_F . On Ω_F the operator F is defined, where for $f \in \Omega_F$

$$Ff = g$$

and g is the inverse image of the class \bar{g} the representative of which is the pair $(F_1(p)\bar{f}_1(p), F_2(p)\bar{f}_2(p))$. F is linear but not unique. Necessary and sufficient for the uniqueness is: the pairs $(F_1(p)\bar{\theta}(p), F_2(p)\bar{\theta}(p))$ have to belong to \mathcal{M} if $(\bar{\theta}(p), \bar{\theta}(p))$ belong to $\mathcal{M} \cap \Omega_F$. Some examples are given.

INSTITUTION: Computation Center of the Academy of Sciences.

DITKIN V.A.

AUTHOR: DITKIN V.A. 20-1-3/44

TITLE: On the Theory of the Operational Calculus (K teorii operatornogo ischisleniya)

PERIODICAL: Doklady Akad. Nauk SSSR, 1957, Vol. 116, Nr. 1, pp. 15-17 (USSR)

ABSTRACT: According to the method of Mikusinski the author develops a calculus for the operator $\frac{d}{dt} t \frac{d}{dt}$. Let C_2 be the set of all two times differentiable functions defined on $0 \leq t < \infty$ and the second derivatives of which are piecewise continuous. If $\varphi(t) \in C_2$ and $\psi(t) \in C_2$, then the product is defined by

$$\varphi(t) \cdot \psi(t) = \frac{d}{dt} \left\{ t \frac{d}{dt} \int_0^t \int_0^1 \varphi(x) \psi[(1-x)(t-x)] dx \right\}.$$

The product belongs to C_2 , it is commutative, associative and distributive with respect to the usual addition. The ring thus obtained is free of zero divisors. It is extended to a quotient field. To the extended operator ring $N(C_2)$ the greatest part of

Card 1/2

On the Theory of the Operational Calculus.

20-1-3/44

the theory developed by Mikusinski can be applied. The operator $\frac{d}{dt} t \frac{d}{dt}$ is similar to the Bessel operator, since putting in the Bessel equation $x = 2\sqrt{t}$, then one obtains

$$\frac{d}{dt} \left(t \frac{dy}{dt} \right) + \left(1 - \frac{v^2}{4t} \right) y = 0.$$

ASSOCIATION: Computing Center of the Acad. Sc. USSR (Vychislitel'nyy tsentr AN SSSR)

PRESENTED BY: A. A. Dorodnitsyn, Academician, April 4, 1957

SUBMITTED: -

AVAILABLE: Library of Congress

Card 2/2

16(1)

PHASE I BOOK EXPLOITATION

SOV/2000

Ditkin, Vitaliy Arsen'yevich and Anatoliy Platonovich Prudnikov

Operatsionnoye ischisleniye po dvum peremennym i yego prilozheniya
(Operational Calculus of Two Variables and Its Applications) Mos-
cow, Fizmatgiz, 1958. 178 p. 8,000 copies printed.

Ed.: M.V. Yakovkin; Tech. Ed.: Ye.A. Yermakova.

PURPOSE: This book is intended for scientists, engineers, aspirants,
and advanced undergraduate students in universities and vtuzes.

COVERAGE: The book discusses fundamentals of the theory of operational calculus of two variables based on two-dimensional Laplace transforms. In order to make this book of more practical value, the authors have included a very large number of operational formulas and have given more attention to calculation technique than to rigor of presentation. The authors have made wide use of existing literature in writing the book, especially the work by D. Voelker and G. Doetsch, Die Zweidimensionale Laplace-Transformation, and "Le Calcul Symbolique à Deux Variables et Ses Applications", by L. Poli and P. Delerue, Memorial des Sciences Mathematiques, fasc. Card 1/5

Operational Calculus (Cont.)

SOV/2000

127. No personalities are mentioned. There are 62 references:
7 Soviet, 14 English, 22 French, 6 German, 8 Italian, 2 Spanish, and
3 Rumanian.

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Operational Calculus (Cont.)

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Operational Calculus (Cont.)

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TITLE: On the Theory of the Operational Calculus (K teorii operatsionnogo ischisleniya)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 3,
pp 395 - 396 (USSR)

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ASSOCIATION: Vychislitel'nyy tsentr AN SSSR (Computation Center AS USSR)
PRESENTED: June 27, 1958, by I.N. Vekua, Academician
SUBMITTED: June 23, 1958

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Sponsoring Agency: Akademiya nauk SSSR. Matematicheskii institut.

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PURPOSE: This book is intended for mathematicians and physicists.

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